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ABSTRACT

The study examined the behaviors of educable mentally handicapped (EMH) children in repairing their utterances when their listener requests clarification. Subjects were 10 EMH children, aged 11-13, with mental-aged matched controls. Repair behaviors were elicited using a picture description and matching game with a barrier between the subject and the experimenter. Action picture cards were used to elicit specific descriptions, and on some of the trials the experimenter indicated a need for clarification of the descriptions. Fourteen categories were created to code the children's repair responses, such as whole repetition, partial repetition, expansion with detail, expansion by specifying referent, irrelevant or inappropriate information, no response, concluding comment, delayed response, and self-correction. Findings indicated that subjects in both groups used all 14 categories of repair strategy with the exception of one category, "concluding comment," which the normal children did not use. EMH children produced significantly more "no responses" than did the normal children. Both groups used "expansion with detail" most often to repair their utterances, but the normal subjects produced significantly more repairs of this type. It is concluded that EMH children have the ability to perceive the needs of their listeners and revise their utterances accordingly. Includes 16 references. (JDD)

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Repair Behaviors of Educable Mentally Handicapped and Normal Children

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Research studies of children's conversational skills have focused on the verbal and non-verbal behaviors exhibited by normally developing children. The conversational strategies these children use to interact socially have been compared to those used by adults and by children with learning disabilities and language disorders. Few researchers, however, have investigated the conversational skills of mentally handicapped children. Further, in the studies that have been conducted, the subjects typically have been children with moderate to severe mental handicaps (Hoy & McKnight, 1977; Leifer & Lewis, 1984; Longhurst & Berry, 1975). No studies have examined the conversational strategies used by mildly mentally handicapped children as compared to those of normal children.

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Children classified as educable mentally handicapped (EMH) may not have acquired the conversational skills needed to be viewed as effective communicators by peers, teachers, and others (Spradlin, 1968). In other words, they may not be communicatively competent to interact successfully with others in their environment. In fact, Heber (1959) has noted the lack of interpersonal communication skills as a defining characteristic of mentally handicapped persons. Some of these communication inadequacies may stem, in part, from an inability of mentally handicapped children to cooperate with their listeners during conversation.

The ability to cooperate with one's conversational partners has been identified as one important aspect of effective communication. Roth and Spekman (1984) have stated that being an effective communicator involves a child's ability to function within both speaker and listener roles. To cooperate fully, children must be able to respond to listener feedback and repair their utterances when their listener indicates a message has not been understood. Simon (1981) states that the ability to repair breakdowns in communication has been viewed as a measure of communicative competence. Recent studies have examined childrens' abilities to cooperate with listeners in a conversation and, more specifically, repair their utterances when their

listener requests clarification. These studies of repair behaviors have indicated that children are sensitive to listener feedback and can revise their utterances to accommodate their listener (Cosgrove & Patterson, 1979; Gallagher, 1977; Peterson, Danner, & Flavell, 1972).

Gallagher (1977) found that normally developing children in Brown's (1973) language stages I to III repeated or revised their original utterances in response to neutral requests for clarification ("What?") from their listener. In addition, she concluded that children's revision behaviors are systematic and change as children increase their knowledge of language. In a similar study of preschool and first-grade children (Peterson, Danner, & Flavell, 1972), the changes in children's responses according to type of listener feedback were observed. During a picture description task, the investigator, attempting to indicate communicative failure, responded to the subject's description in one of three ways: 1) a puzzled facial expression, 2) an implicit cue such as "I don't understand," and 3) an explicit cue such as "Can you tell me something more?" The investigators concluded that neither group effectively interpreted a puzzled facial expression, and although both groups revised their utterances in response to the explicit request, the older

children demonstrated a superior ability to the preschool subjects to repair their utterances following the implicit cue.

Brinton, Fujiki, Loeb, and Winkler (1986) investigated children three through nine years old as they responded to stacked sequences of requests for clarification (the response to a request for clarification is met by a second and then a third request for clarification). The following request sequence was used to elicit repairs: 1) "Huh?" 2)"What?" and 3) "I don't understand." The children's repairs were evaluated according to their relationship to the original utterance and placed in one of five categories. The findings indicated some developmental patterns in the ways children of different ages responded to sequenced requests for clarification. Further, it was demonstrated that the children responded appropriately to a hierarchy of requests for clarification at different ages and that the degree of explicitness of the request could determine the type of repair the speaker produced. Children in all four age groups repaired their original utterance, in varying degrees, when given a request for clarification. However, as the stacked sequence progressed, many of the younger children did not provide appropriate, informative responses

whereas the older subjects usually responded appropriately to all the requests in the sequence.

Although several studies have focused on the conversational skills of normally developing children, only a few researchers have directed attention toward mentally handicapped children. In one such study, Longhurst and Berry (1975) compared the repair behaviors of three groups of mentally handicapped adolescents (mean IQs: 78, 63,47) between the chronological ages of 10.3 and 21.75. During the barrier game-picture description task, the experimenter responded to the subject's descriptions with one of the following three types of feedback indicating communicative failure: gestural-facial, implicit, or explicit. Findings indicated that subjects in the lower IQ groups were less effective than subjects in the higher-functioning group in interpreting gestural and implicit listener feedback, and often did not respond with redescriptions.

Our investigation focused specifically on the repair behaviors of the educable mentally handicapped population. To examine these behaviors, a modification of the stacked sequence of requests used by Brinton, Fujiki, Loeb, and Winkler (1986) was used to determine the differences in

repair strategies used by EMH and normal children. We felt that by using the stacked sequence method, the subjects were placed in a more demanding communicative situation than if a single request for clarification were used.

The purpose of this study was to compare the type of repair behaviors used by educable mentally handicapped (EMH) children and normal children, matched for MA, in response to a stacked sequence of verbal requests for clarification.

Method

Subjects. Subjects were two groups of elementary school children. The experimental subjects were ten 11 to 13 year old educable mentally handicapped (EMH) children matched by group to 8 to 9 year old normal children by mental age.

The control group had IQ's within normal limits, grade-appropriate classroom placement, and no history of referral for special education placement. EMH subjects had been classified and placed in a special education classroom 1based upon a battery of assessment tools (Stanford-Binet Test of Intelligence, 1986; Weschler Intelligence Scale for Children-Revised, 1974), an adaptive behavior rating, and classroom performance. EMH children participating in the study fell with the EMH IQ guidelines of 55-70. All

subjects had hearing and articulation within normal limits, no known history of psychological or behavioral disturbance, and were from monolingual English speaking homes.

Procedure. A picture description and matching game with a barrier between the subject and experimenter served as the context in which the subjects' repair behaviors were elicited. The barrier allowed the subject and the experimenter to see each other but not the table top immediately in front of each participant. Action pictures were used in the experimental tasks in an attempt to elicit specific descriptions rather than only identification of common objects. The experimenter's picture cards included 16 sets of pictures, six pictures per set, for a total of 96 pictures (DLM Teaching Resources, 1982). The six picturess in each set contained similar attributes such as identical scenery or characters. The subjects' picture cards included 16 pictures, one for each trial. Each of the subjects' 16 pictures matched one of the experimenter's six pictures. Each subject was instructed to describe his/her picture so that the experimenter could find the matching picture on her side of the table. During 10 of the 16 trials, the investigator indicated a need for clarification of the descriptions with the following sequence of requests:

Child's initial description of the drawing.

Request 1 - Examiner: "What?" (upward intonation)
Subject's response to request for clarification (repair).

Request 2 - Examiner: "I don't understand." or "I can't get it."
Subject's response to second request for clarification (repair).

Request 3 - Examiner: "I still don't understand." or "I still can't get it."
Subject's response to third request for clarification (repair).
Examiner: "Oh, I see."

Coding Procedure. The audio-cassette tapes used to record the tasks were transcribed and categorized for analysis. Initially the five coding categories devised by Brinton, Fujiki, Loeb, and Winkler (1986) were to be used in this study. However, after initial review of subject's responses we felt that five categories alone did not adequately reflect the variety of discrete repair strategies observed in this study. In order to better describe and analyze the repair behaviors the following 14 repair

categories were created to code the children's repair responses:

1. Whole Repetition (Rw): the subject repeated all of his/her preceding utterance in response to the request. The semantic content remained intact, although the form may have been altered.

   S: "The girl's wearing pajamas."

   E: "What?"

   S: "The girl is wearing pajamas."

2. Partial Repetition (Rp): the subject repeated part of his/her preceding utterance in response to the request.

   S: "The boy and girl are jogging."

   E: "I can't get it."

   S: "Jogging."

3. Expansion with Detail (Ed): the subject expanded on, but did not repeat, previously mentioned information. He/she added specific attributes or details.

   S: "The boy and girl are jogging."

   E: "What?"

   S: "The boy's wearing blue shorts."

4. Expansion by specifying referent (Er): the subject expanded on previously mentioned information by clarifying, defining, or specifying a referent.

   S: "She's in bed."

   E: "What?"

   S: "Well, she's climbing onto the bed."

   S: "There's a red thing."

   E: "What?"

   S: "It's a red car."

5. Adding the Main Idea (MI): the subject added to previous information by adding the main idea of the picture.

   S: "There's half of a log."

   E: "I don't understand."

   S: "A boy hit a log and fell of his bike."

6. Hypothesis (HP): utterances in which the child hypothesized about what might happen next in the picture or why pictured characters were doing something.

   S: "A boy and girl are jogging."

   E: "What?"

   S: "The girl kept on running until she got to the corner."

7. Relevant New Information (Nr): the subject gave new information that was relevant to the task.

   S: "The man is shutting the car trunk.

   E: "I can't get it."

   S: "There's a woman on the sidewalk."

8. Irrelevant or Inappropriate Information (I): the subject gave new information that was irrelevant to the task or was not useable (e.g. "The thing is there.")

9. No Response (NR): The subject did not respond to the request.

10. Concluding Comment (CC): the subject attempted to conclude the task (e.g. "The end." or "That's all.")

11. Delayed Response (DR): the subject's utterance was delayed following the request by at least 5 seconds.

12. Delayed Response with Filler (DRf): the subject used a filler (e.g. "Mmm." or "Umm.") before a response where the response occurred at least 5 seconds after the request.

13. Self-Correction (SC): the subject corrected part of an utterance either within an utterance or after a request (e.g. "It's a red...no, a blue car.")

14. Comment (C): an utterance in which the subject commented on the task, but gave no descriptive information (e.g. "This is a hard one.")

In many instances, subjects utterances were divided into more than one category. For example, a coding of the following revision would have been: Whole repetition (Rw) + Expansion with Detail (Ed) + Concluding Comment (CC).

Example: S: "The boy is putting on his hat."
E: "What?"
S: "The boy is putting on his hat, it's green and brown, and that's all."

Reliability of transcription was determined by having a Master's level speech-language pathologist transcribe 10 percent of the subject's responses. A measure of reliability for the coding procedure also was determined by having the speech-language pathologist and the investigator independently categorize the behaviors. The percentages of agreement for the transcription and coding procedures were 97% and 90%, respectively.

Results

The repair behaviors, elicited by the experimenter's requests for clarification, were coded into the 14 response categories reflecting different repair strategies.

(Figure 1 about here)

Surprisingly, the normal and EMH children responded to requests for clarification in much the same way. Subjects in both groups used all 14 categories of repair strategy with the exception of one category, Concluding Comment (CC), which the normal children did not use. The most frequently used strategy for both groups was Expansion with Detail (Ed). This was verified by a three-way repeated measures ANOVA, Group (2) x Request (3) x Response Category (14).

Separate two-way analyses of variance of all 14 response categories were conducted, and there were significant differences between the two groups for the response categories No Response (NR) and Expansion with Detail (Ed). The EMH children produced significantly more No Responses than did the normal children, and the frequency of NR increased as the request sequence progressed. EMH children also exhibited a greater degree of frustration as the sequence progressed than did the normal children. With the exception of one NR recorded for one normal subject, the

children in the normal group always responded to a request even though the response may have been delayed.

Although both groups used Expansion with Detail (Ed) most often to repair their utterances, the normal subjects produced significantly more repairs of this type. Both groups repaired their utterances with Ed similarly until the third request was given. Following the third request, the normal children continued to use the Ed strategy whereas the EMH children frequently attempted to repair utterances by using less effective strategies. Thus, the two groups were not only different in their overall use of Expansion with Detail, but also in their use at different levels of requests for clarification. This repair behavior was the only one that the two groups used significantly differently at different levels of requests.

Further statistical analyses indicated that the level of request often related to the strategy that the subjects used. Although a variety of repair strategies was elicited, six of the strategy categories showed significance according to the position of the request within the sequence.

(Figure 2 about here)

Thus, the level of request often influenced the strategy that the subjects used. Although a variety of repair strategies was elicited, six of the strategy categories showed significance according to the position of the request within the sequence.

Repetitions, both whole (Rw) and partial (Rp), varied among requests. Both groups used repetitions significantly more often following the first request than they did after the last two requests. This finding is similar to the data noted by Brinton et al.(1986).

Both groups employed Expansion by Specifying a Referent (Er) and Adding the Main Idea (MI) more frequently following the first and second request, than they did after the third request for clarification. Similarly, Self-Corrections (SC) occurred more frequently after the first request than they did following the second or third request.

Finally, both groups' use of Irrelevant Information (I) was influenced by the level of request. Both the EMH and normal children abandoned other strategies and resorted to providing irrelevant or inappropriate information as the request sequence progressed. From these results, it appears that the subjects regarded the last two requests as

a need for further information rather than a request for a repetition.

Discussion

The results of our study show that EMH children have the ability to perceive the needs of their listeners and revise their utterances accordingly.

In analyzing the results of this preliminary study, we felt that some aspects of it should be probed further. For example, one might use language age in addition to mental age by which to match subjects. In addition, although the matching game paradigm provided a meaningful context in which repair strategies were elicited, an alternate method may better represent real life communicative situations.

There are however, significant implications that can be drawn from this study and should be helpful to speech-language pathologists and special educators. We found that EMH children, in a structured communicative situation, have a wide range of appropriate revision behaviors available to them and can use them to improve their message. However, when placed in an increasingly demanding situation, as in responding to the third request in a row, these children appear to lack the confidence to

continue to re-use effective strategies. Instead they may abandon their strategies and respond inadequately or not respond at all. Those EMH children who did not provide useful information may have interpreted the continued requests as disapproval of the form or content of their message. This would support MacMillan (1982) who noted that a history of previous academic and social failure will affect their confidence when confronted with new situations and demands.

The information from our study can also be applied when assessing EMH children's communicative effectiveness. These children should be able to respond to requests for clarification at a level commensurate with their mental ability. As we have seen, EMH children may need increasing communication demands placed on them before we can fully identify possible communication inadequacies. In the future, speech-language pathologists should include a thorough investigation of repair strategies under varying degrees of stress when assessing the communicative effectiveness of EMH children.

Professionals should also remember that these children may not possess the skills to respond appropriately to listener feedback in a less structured, less goal-oriented

communication situation. In planning goals to improve the conversational skills of EMH children, we should be careful to vary the communicative situations to ensure a variety of naturalistic contexts. Repair strategies in various contexts can be elicited and encouraged as we help EMH children maintain effective, efficient communication.

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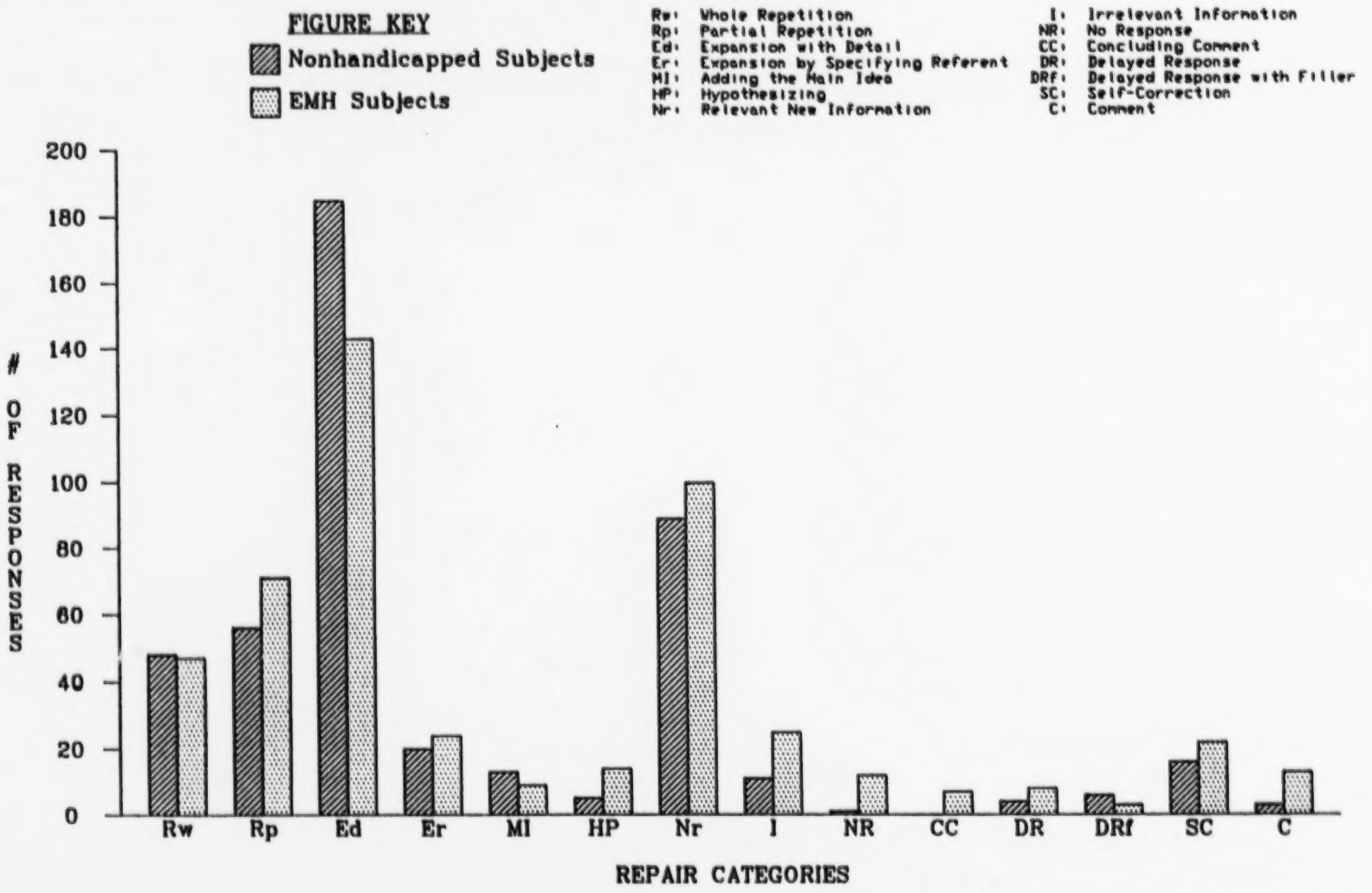

FIGURE 1. The number of responses by repair categories for the Nonhandicapped and EMH groups.

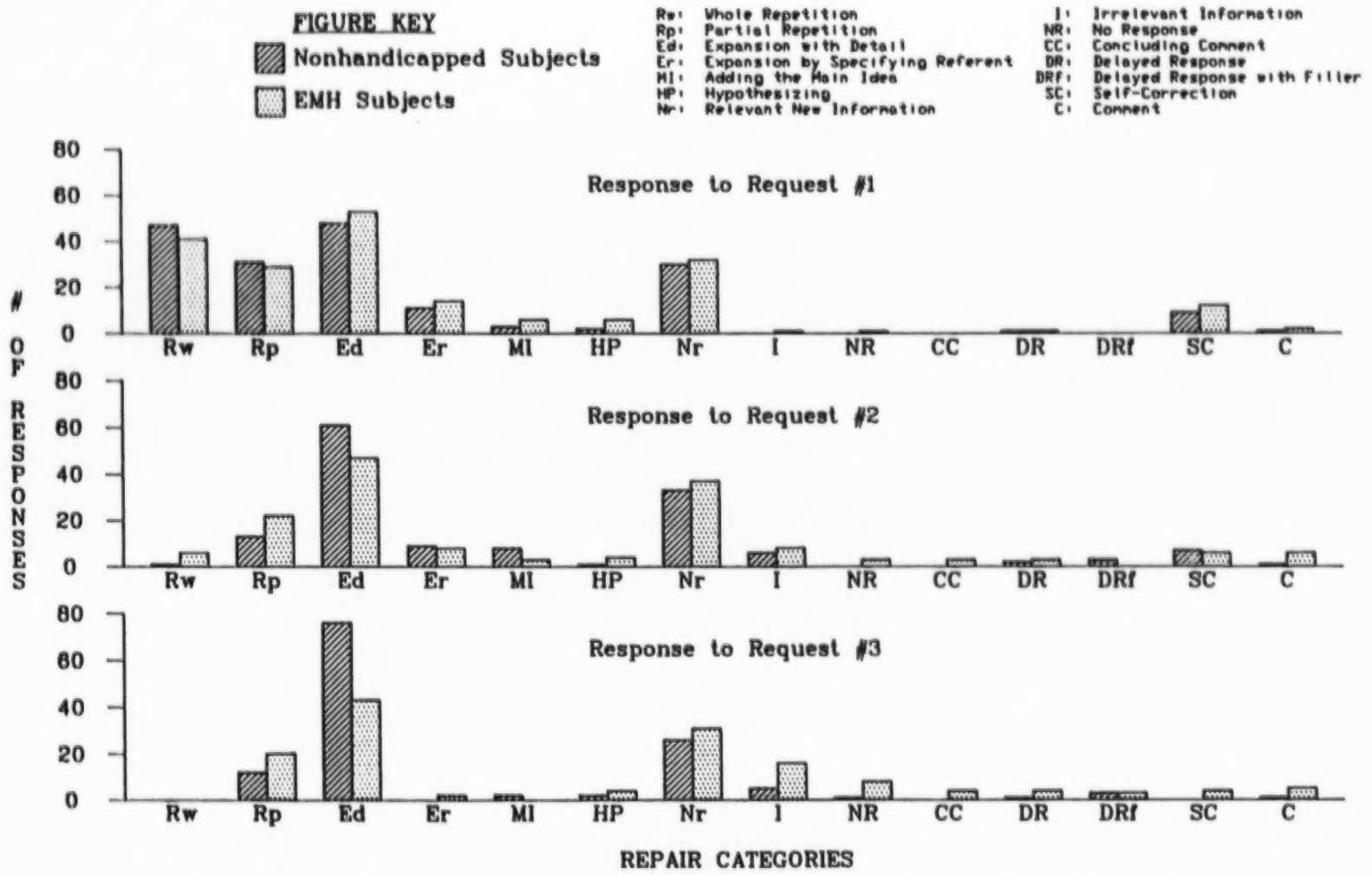

FIGURE 2. The number of responses by repair categories by level of request for the Nonhandicapped and EMH groups.

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